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|---|-------------|----------------------|---------------------|------------------|
| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/709,342 | 04/29/2004 | Do-Kyoung Kwon | MTKP0171USA | 3341 |
| 27765 | 7590 | 11/02/2007 | | |
| NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION | | | EXAMINER | |
| P.O. BOX 506 | | | VO, TUNG T | |
| MERRIFIELD, VA 22116 | | | | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2621 | |
| | | | NOTIFICATION DATE | DELIVERY MODE |
| | | | 11/02/2007 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

winstonhsu.uspto@gmail.com
Patent.admin.uspto.Rcv@naipo.com
mis.ap.uspto@naipo.com.tw

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/709,342 | KWON ET AL. | |
| | Examiner | Art Unit | |
| | Tung Vo | 2621 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 23 is/are rejected.
- 7) ☒ Claim(s) 2-22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/29/04; 05/17/04; 05/03/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joch et al. (US 7,227,901) in view of Jeon et al. (US 5,937,101).

Re claim 1, Joch teaches a method for reducing a blocking artifact in a video stream (44 of fig. 4, figs. 5-7), the method comprising: calculating an activity value representing local activity around a block boundary between a plurality of adjacent blocks in the video stream (104, 112, 114 of fig. 5); determining a region mode for the block boundary according to the activity value (116 and 120 of fig. 5); and selecting one of a plurality of filters to filter a plurality of pixels around the block boundary to reduce the blocking artifact according to the region mode (col. 17, lines 58-67); wherein at least one of the filters is a one dimensional filter formed by using a transform (40 of fig. 4; fig. 3a).

It is noted that Joch does not particularly disclose using a 4-point Hadamard Transformation as claimed.

However, Jeon teaches using a Hadamard Transformation in inverse transform operator (23 of fig. 2) the obviously includes 4-point for post processing (26 of fig. 2). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Hadamard Transformation of

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Jeon into the transformation (40 of fig. 4) of Joch for minimizing a blocking artifact by estimating a hadamard transform coefficient in adjustable value with respect to the information lost upon quantization in order to minimize pixel differences between block boundaries.

Allowable Subject Matter

3. Claims 2-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: Either Joch or Jeon does not particularly teach wherein if at least one of the adjacent blocks is an intra-coded block:

if the region mode is an active region and a high frequency component $c_{sub.3}$ is less than a fourth threshold, filtering the pixels around the block boundary using the one dimensional filter formed by using the 4-point Hadamard Transform (HT); and

if none of the adjacent blocks are intra-coded blocks: if the region mode is an active region and the high frequency component $c_{sub.3}$ is less than a sixth threshold, filtering the pixels around the block boundary using the one dimensional filter formed by using the 4-point Hadamard Transform (HT) as specified in claim 2.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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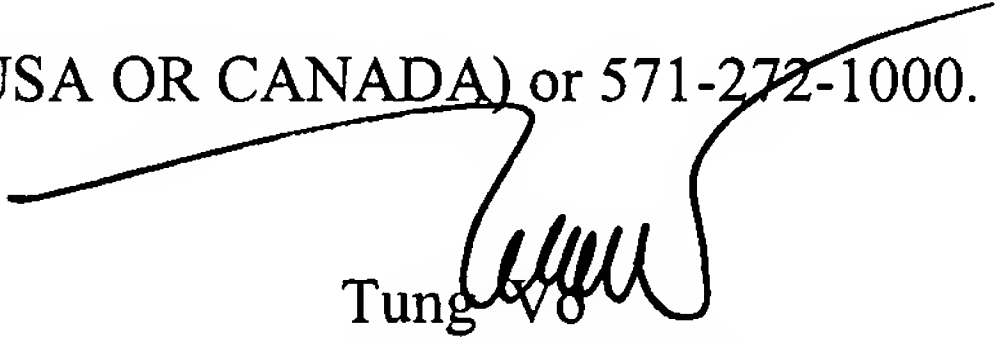
Yu et al. (US 6,823,089) discloses method of determining the extent of blocking and contouring artifacts in a digital image.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung Vo whose telephone number is 571-272-7340. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Tung Vo
Primary Examiner
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